Remarks

Claims 1-7, 12-17 and 19-21 were pending.

Claims 1-3, 5, 12-14 and 16 are withdrawn.

Claims 4, 6 and 7 are amended. Withdrawn claim 1 is also amended.

Claims 15 and 19-21 are cancelled.

The application now contains claims 1-7, 12-14, 16 and 17.

Withdrawn claim 1, from which claim 4 depends, is amended to focus on particular features of the invention by limiting R^1 to optionally substituted C_{6-24}aryl or C_{2-20} heteroaryl and R^2 to H. Support is found in the specification on page 12 line 20.

Claim 4 is amended to specifically recite the limitations of instantly amended claim 1 regarding the monomer of formula I. While this may appear redundant because claim 4 is dependent on claim 1, Applicants have inserted the limitations because claim 1 is currently withdrawn and this monomer unit is an essential feature of the invention.

Claims 6 and 7 are amended to depend from claim 4.

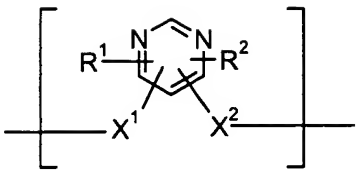
No new matter is added.

Rejections

Claims 4-7 and 17 are rejected under 35 USC 103(a) as obvious over Kim et.al., US 5,876,864 which discloses a copolymer which may include a pyridine repeating unit. The Action also notes that the disclosure refers broadly to heterocyclic components in column 4 line 39, lists pyridine as a possible heterocycle and shows heterocycles with two nitrogens in column 6, second and third structures. The Action maintains that pyridines are similar to pyrimidines and that it would be obvious to substitute one for the other and expect the same properties.

Applicants respectfully traverse the rejections.

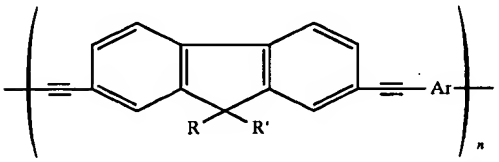
Applicants respectfully note that the fundamental feature of all the instant claims is a polymer which contains a pyrimidine repeating unit of the following formula



(I); wherein

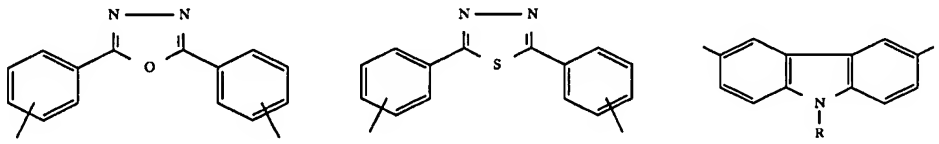
R^1 is C_{6-24}aryl or C_{2-20}heteroaryl each of which optionally can be substituted, and R^2 is H. Despite the broad generic disclosure of Kim, no such polymer with this repeating unit can be found in the cited art. In the above amendments, Applicants have narrowed the scope of these polymers to focus on what they consider to be the most interesting, but retain the right to pursue deleted material in subsequent filings. Applicants further reinforce that it is the presence of these pyrimidine monomers that provides the essential technical feature of the instant, novel polymers.

Specifically, Kim discloses a fluorene-based alternating polymer having the following formula



(I)

to be used as light emitting materials of electroluminescent elements. While Ar may be a heterocyclic compound such as pyridine, the only Ar groups identified in Kim in columns 4 through 6 are the following groups containing 5 membered ring heterocycles:



No mention is made of the instant aryl substituted pyrimidine which is a 6 membered ring with nitrogens at the 1 and 3 positions.

Applicants further respectfully aver that a number of specific properties must be balanced to create electroluminescent devices based on organic polymers as is evident in the discussions of the instant application and the cited art, for example page 3 line 25 through page 4 line 21 of the instant specification and columns 1 and 2 of Kim. Further it is well known that in the fabrication of OLED devices it is essential, that the energy levels, such as the HOMO and LUMO levels of every layer can be matched so that there is the energy gaps are small.

Applicants respectfully contend that it would be impossible to predict from a broad description of heterocycles which particular ones would lead to polymers with the requisite and highly demanding properties required. Furthermore, Applicants maintain that one skilled in the art would not assume that one generic heterocycle could readily be replaced for another in the preparation of such polymers for electronic reasons alone.

Applicants have prepared and demonstrated the efficacy of polymers that are not present in the art nor which are adequately described in the art. In particular, the polymers contain a select pyrimidine core which is not found in the art and which serves as a novel feature for all the instant claims.

Applicants therefore respectfully submit that the rejections of claims 4, 6, 7 and 17 under 35 USC 103(a) over US 5,876,864 are overcome and kindly ask that the rejections be withdrawn and that the claims be found allowable.

Applicants further kindly ask that upon finding claims 4, 6, 7 and 17 allowable, that claims 1-3, 5 and 16 be rejoined and also found allowable as these claims are to polymers which also comprise the novel pyrimidine repeating unit. Also, Applicants note that under PCT rules, the use of a novel compound can also be claimed as part of a single invention and therefore kindly ask that claims 12-14 to a device containing the novel polymers also be rejoined and found allowable.

In the event that minor amendments will further prosecution, Applicants request that the examiner contact the undersigned representative.

Respectfully submitted,

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